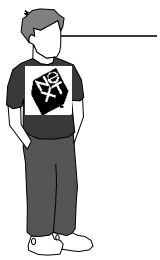

SCaNeWS

Southern California NeXT™ Users Group Newsletter

VOLUME 1, NUMBER 5
JUNE 1991

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Summer is fast approaching, and anyone wanting to stock up on summer reading can find a wealth of literature from and about NeXT. There is a new, abbreviated *Software and Peripherals* catalogue, and the 2.0 printed documentation has been shipping for over a month now: the 10-volume *NeXT Developer's Library* packed with everything you ever wanted to know about anything from the Mach operating system to the DSP chip, and (finally!) indexes at the back of every one. The Spring 1991 issue of *NeXT on Campus* is out, with indepth discussions of Mathematica, the parallel processing application Zilla, and an especially interesting article on a marriage of virtual reality and art at the University of Iowa: the recreation on the NeXT of an interactive sculpture whose contents the user can explore at the click of a mouse button..

June Intro

Lorraine Rapp
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The June issue of *BYTE* has a rave review of the NeXTstations: running a suite of Unix benchmark programs, the NeXT outperformed a high-end 486, a Sun IPC, and the Mac IIfx. Though the reviewer did gripe a little about the nonstandard operating system and networking environment that make the NeXT an occasionally difficult addition to a heterogeneous Unix network, he had no qualms about recommending the NeXTstation as a "first machine" for a novice buyer over a PC or Mac. Additionally, in a feature on graphical user interfaces (GUI), *BYTE* includes NeXTstep with Motif and Open Look as a major player among GUIs available for Unix workstations, citing its friendlier development environment as significant compensation for its lack of market share.

And, of course, there is *SCaNeWS*. For those of you who missed getting a copy of Mike Mahoney's invaluable Interface Builder tutorial at the May meeting, you can pick it up via anonymous ftp at nova.cc.purdue.edu in /pub/next/submissions--hopefully it will be moving to /pub/next/Newsletters/SCaNeWS in the near future. Joining it there should be a corrected copy of the February issue of

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The Adventure of the Week: Porting a Mac Game to the NeXT

Robert Thille
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A friend of mine who works for Computrends at UC Irvine introduced me to Ishido on the Macintosh. I was hooked in no time! If you have a Mac and not a NeXT, I heartily recommend buying it. However, since the Mac that I ran it on was my brother's, I wanted Ishido on my NeXT. I had toyed with porting Risk from the Mac a few months earlier, but failed due to laziness. I reasoned that Ishido would be much easier, since the game is played on a board with rectangular tiles, whereas Risk required funny shaped pieces. I was right.

First, a little background about Ishido. Ishido is a single person (at a time) game that is played on an eight (tall) by twelve (wide) board. The squares at the outer edge of the board are colored black, and the rest are white. See Figure 1.

The light circles aren't actually on the board, but they designate the starting squares. The next component of the game is the pouch and stones. The pouch is just the collection of all of the stones. There are seventy-two stones: six foregrounds, six backgrounds, and two stones of each design. Figure 1 contains examples of backgrounds and foregrounds. The actual ones are more complicated and are tailored to grayscale instead of color.

To start the game six stones are removed from the pouch and placed on the board as indicated. This is done randomly with the following restriction: no background or foreground may be repeated. This insures that all the backgrounds and foregrounds are displayed on the board at the start.

Then, stones are drawn from the pouch randomly and placed on the board. To place a stone on the board, you must match an attribute of a tile already on the board. If the stone you are trying to place is green with a triangle, you must place it next to a green tile, or a tile with a triangle. Simple. However, if placing the tile next to two tiles, you must match the background of one and the foreground of the other. See Figure #2.

This principle is extended to three and four stone matches. For a three stone match, you must match the foreground on two and the background on the other one, or vice versa. For a four stone match, called a FourWay, you must match two stones' foregrounds and the remaining stones' backgrounds. Difficult to explain, but simple after a little practice. Trust me. :-) In addition to the

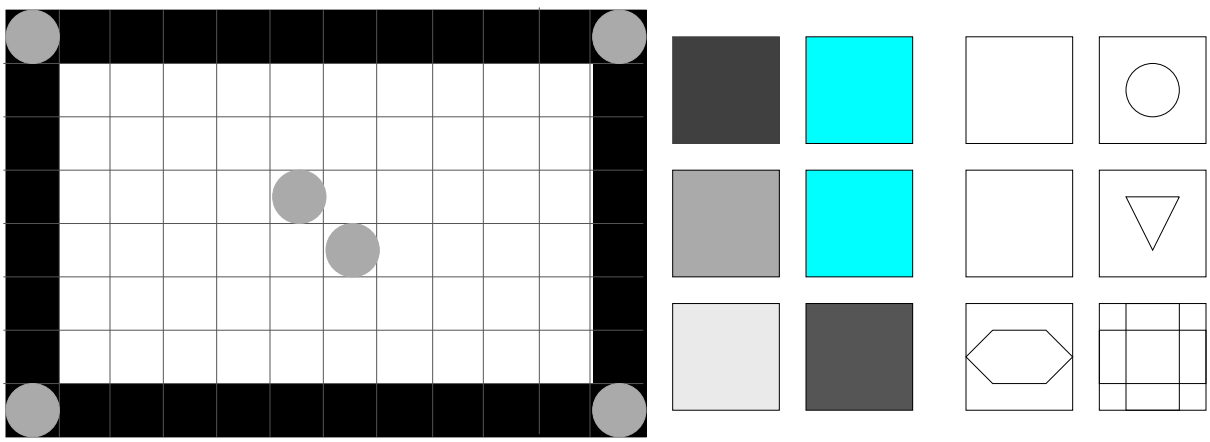

FIGURE 1. Ishido Board and Stones

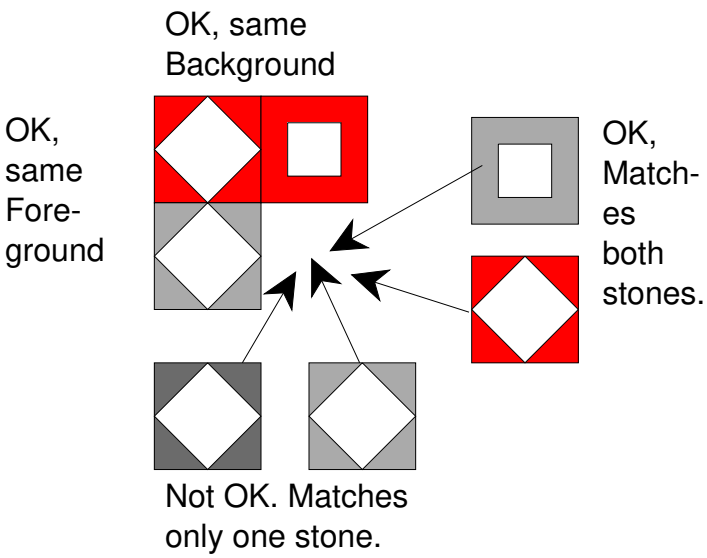

FIGURE 2. Matching Stones

board, there is a scoreboard, an indicator that tells you how many stones are left in the pouch (but not which ones), and the display of the next stone to place on the board.

Now that we have that down, we can move on to the implementation. In IB, I created a new project. I dragged a new button into the window. Then I dragged a screen shot of the Mac screen that I had take of the Mac version onto the button. This gave me the graphic of the Mac version with nearly no work. I disabled the button and made it borderless. Then I dragged a button onto the board and turned it into a matrix, eight by twelve, by alternate-dragging. I adjusted it so that the buttons were the right size and the spacing was just right. Then I made the buttons and the background transparent so that the board would show through. I dragged another button to the window, making it the same size as a square on the board. I placed this over the place in the Mac window where the next tile appears. I added a text field to display the player's score, and a custom view to display the number of tiles remaining, graphically. All of this stuff was connected to the MyApplication object in IB.

Bear in mind that this was to be a prototype. I wasn't worried about stealing everything from the Mac version, because it wasn't getting off of my machine, and I wasn't going to be using both at once. I figured I was within the limits of legal. I also wasn't worried about having everything in the Application, because it was supposed to work, not be pretty. I knew that developing the application from scratch as a NeXT application, and making it modular and truly object-oriented would take a lot more work, and it is. I'm working on a fully featured version of "Stones", since Ishido is trademarked. I'll probably ask $5 for it, but if you don't want to pay, that's no problem. Anyway, back to the logic in the Application object.

On appDidInit: the application setup some global variables with the sounds to play upon placement of a stone, and upon achieving a fourway. Then I setup the bitmaps. I use one big bitmap in IB, and divide it into the 36 different icons with code. It's easier to keep track of that way. I initialize the board and the pouch, putting the starting stones on the board and updating the number of stones left in the pouch display. Then I call nextStone.

nextStone is the routine that gets the next tile out of the pouch and displays it. It also sets the buttons in the matrix to disabled or enabled depending on whether the stone can go there. This is where a lot of algorithmic work goes on, to determine which places on the board are legal moves. As a (probably unnecessary) optimization, I keep a list of the possible moves, without restriction to matches, and check only against those squares. nextStone also handles ending the game if the stone doesn't go anywhere on the board. :-(

The only other bit of code in the application was the code that was called when the player selected a square. This simply changed the icon of the selected button to that of the stone being placed, updated the score, and called nextStone.

I'll flesh out some more of the details when I talk about turning this prototype into a more polished application. I hope to have this next article ready in time for the next SCaNNews. But, it depends on how long it takes me to finish Stones.

OFF THE NET

Excerpts from postings to comp.sys.next
Compiled by Alison Bomar (bomar@beach.csulb.edu)

Editors' Note: The selection criteria for Usenet postings are based solely on their interest. SCaN makes no claim, explicit or implied, as to the accuracy of the information contained in these excerpts. We also assume that people who post on Usenet will enjoy seeing their words in print.

How to Hook Up a MIDI Keyboard to Your NeXTstation

Ross Garrett Cutler
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I've seen numerous questions on the net in the last several weeks on how to hook up a MIDI device to the NeXT. I called NeXT several times about this and talked to numerous tech people; no one knew how to do it except for $500 (for an expensive MIDI adapter)! Even worse, they said they'd call back after they investgated it more... two months later and still no reply...

Anyway...at least I got to learn a little about MIDI :-)

For the 030 systems, all you do is buy a MIDI adapter for the Mac. I recommend the Optcode MIDI Translator for $45 (Mac Zone). A MIDI adapter is necessary because MIDI is a current loop and your serial port isn't. It consists of a few ICs (most importantly a Sharp PC-900 opto-isolator) and a few resistors; you could make it yourself (the schematic is similar to the one given in "MIDI for Musicians" by C.Aderton) but for $45 (premade), it's not worth it.

For the 040 systems (like mine), use the same adapter. But since the 030's use RS422 and the 040's use RS423, you're going to have to modify their cable. The basic difference between RS422 and RS423 is the former is a differential (balanced pair) scheme while the latter still uses a ground. Now the MIDI Translator expects a RS422 (like the Mac uses); you can "convert" the RS422 type device into a RS423 device by grounding the RXD+ and TXD+ lines; albeit crude, it works.

The pinout of the MIDI Translator is given below:

1 Clock
2 NC (no connections)
3 RXD-
4 NC
5 TXD-
6 RXD+
7 NC
8 TXD+

The pinout for the cable that comes with it is:

Computer	MIDI
1 R	Br
2 Br	R
3 G	O
4 Y	Y
5 O	G
6 Black	Blue
7 P	P
8 Blue	Black

To make the above change, I opened up their cable and shorted the yellow, black and blue wires together. The resultant cable is symmetric.

I tested it on my NeXTstation running 2.1, hooked up to a CZ-1. MIDI in (e.g. using the CZ-1 as a controller for Ensemble) will actually work without the above hack, but MIDI out (using the CZ-1 as another 8 voices) won't (unless you do the hack, of course).

Notes:

1. The MIDI Translator is self powered (it grabs power off of the line via a capacitor).

2. I make no guarantees to the above. It works for me...

3. I've noticed that Ensemble starts to crap out for complicated midi out's (e.g. skynard32.-mid -- see below); this is a bug in Ensemble...

4. For more details on RS422/RS423, see the excellent article "Welcome to the Standards Jungle" in Byte, 2-83.

5. For details on MIDI, check out the midi* files in ucsd.edu.

6. For lots of MIDI files to play, see /music/midi in media-lab.-media.mit.edu.

Hope this saves someone time getting their NeXT into the music world. Believe me, it's definitely worth it!
Enjoy...Ross.

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OFF THE NET

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How to Connect a Modem

Mark Adler
madler@tybalt.caltech.edu

People seem to be having problems getting their modems to work, so here is how my modem is set up and how I use it for dial-in and dial-out (a public service message):

The modem on my NeXT works just honky-dory for both dial-in and dial-out. I have an Everex/Abaton EverFax 24/96E. (The fax part doesn't and can't work since it does not implement a Class II Fax command set, but that's a different story ...)

First off, if you have it, read the online documentation. The keyword "serial" will bring up all the relevant documents in Librarian. Of particular interest is the zs(4) man page and 13_Peripherals/_Attaching Modems.rtf. If you are still using 1.0 or 1.0a, instead get the Technical Support Note SerialPortDoc.wn from one of the ftp sites.

Second, if you have NeXTStep 2.0, and you want to be able to dial-in to your machine, you will need to upgrade to 2.1. There are lots of other good reasons to go to 2.1, so do it anyway. Dial-in (and out) works in 1.0 and 1.0a also, if you're still back there in the dark ages.

CABLING

Given that the pins on the male DIN-8 connector look like this:

```
 6 7 8
3 4  5
 1 2
```

then my cable, which came with an EMAC (Everex) modem, is wired thusly:

DIN-8	*DB-25*	*signal*	*means*	*direction*
1	20	DTR	data terminal ready	to modem
2	8	DCD	data carrier detect	from modem
3	2	TD	transmitted data	to modem
4	7	SG	signal ground	n/a
5	3	RD	received data	from modem
6	NC			
7	NC			
8	NC			
case	case	the metal connector housings and probably the cable shield also		

The NeXT documentation mentioned above says that pin 8 of the DIN-8 connector should be connected to pin 7 of the DB-25 (signal ground) along with pin 4. Apparently this is not necessary. Pin 8 is labeled RXD+ implying that it's a return line for pin 5 (RXD-). Perhaps connecting RXD+ to signal ground is necessary at baud rates higher than 9600, but at 9600, I get no errors in reception. If you are wiring your own cable, you should follow the NeXT directions, but if you have a cable like mine, it'll work. Pin 8 should *not* be connected ground for serial ports on 68040 NeXT's (see below).

Note that pin 2 on the DIN-8 is labeled CTS (clear to send) by NeXT. Ignore that. It should be connected to DCD only. I bought a $5 Mac-modem cable off a clearance table that had pin 2 on the DIN-8 connected to both DCD (8) and CTS (5) on the DB-25 end! This cable did not work. (If it weren't for the RS-232 standards concerning connecting two outputs, it might have even damaged my modem.) If I wanted to use this cable, I would have broken off pin 5 in the male DB-25 connector.

Late press: since this was originally posted, the 68040 NeXT's arrived and have slightly different serial port connections. The above cabling will work fine with the 68040 serial ports, so long as you *don't* connect pin 8, as the documentation for the 68030 ports suggests. If you also want to use hardware flow control, you will need to connect DIN pin 6 to the DB-25 pin 4 (RTS) and DIN pin 8 to DB-25 pin 5 (CTS). DIN pin 7 should remain unconnected. This is the way my new, handmade modem

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OFF THE NET

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cable is now wired for my upgraded 040 cube:

DIN-8	DB-25	signal	means	direction
1	20	DTR	data terminal ready	to modem
2	8	DCD	data carrier detect	from modem
3	2	TD	transmitted data	to modem
4	7	SG	signal ground	n/a
5	3	RD	received data	from modem
6	4	RTS	request to send	to modem
7	NC			
8	5	CTS	clear to send	from modem

In general, any Mac modem cable will work for dial-out, some Mac modem cables will work for dial-in and dial-out, but no Mac modem cable will work with hardware flow control. Of course, you can cannibalize any Mac modem cable and rewire it, as I did.

MODEM CONFIGURATION

The important control signals are DTR and DCD. The modem needs to be set up to respond to DTR and generate DCD in a specified way. When DTR is asserted, the modem should allow auto-answer and respond to commands. When DTR is deasserted, it should not allow the above, and also hang up the phone if it was off-hook. The modem should assert DCD if and only if a carrier is detected.

My modem's default behavior is to always assert DCD and to always ignore DTR. I suspect that all modems for the Mac and PC world are this way, since modem control is not needed in most cases. This default behavior makes the modem/computer connection a little more robust to cable variations. However, it's too limited for dial-in support.

You will most likely have to read your modem manual to change this behavior. (Perish the thought.) On my modem, I used the command:

AT &C1 &D2 S0=5 &W0

The &C1 makes DCD reflect the carrier status and the &D2 makes the modem respond as described above to DTR. The S0=5 tells the modem to answer the phone after five rings (the default is S0=0, which doesn't answer at all). Finally, the &W0 writes the configuration to the non-volatile RAM, so the modem will always be this way when powered up. These commands seem pretty common for modern modems.

If you want to use hardware flow control (only available on 68040 NeXT serial ports), then you will also have to tell the modem to use RTS/CTS flow control. You will have to (shudder) read the modem manual. On my modem, I used the command:

AT \Q3 \X1 &W0

where the \Q3 tells the modem to use bi-directional RTS/CTS flow control, and the \X1 tells the modem to not use xon/xoff flow control (this allows xon and xoff to pass through as normal data). These commands may be more specific to my modem than the previous commands for DTR and DCD.

I recommend using hardware flow control if you have a 68040 NeXT and your modem supports it. It is essential for reliable communication at 9600 bps and above.

DIAL IN

For dialing in, I changed the ttyda line (I use port A for the modem) in /etc/ttys to:

ttyda "/usr/etc/getty std.9600" vt100 on

where the 9600 is the speed to talk to the modem at, vt100 says to assume the terminal dialing in is VT-100 compatible (you can leave this as "dialup" to make no assumption), and the "on" enables dial-ins. See below for why I use 9600 bps.

If you have a 68040 NeXT and are using hardware flow control, you need to change the ttyda to ttydfa. The line in my /etc/ttys actually reads:

ttydfa "/usr/etc/getty std.9600" vt100 on

For any changes to /etc/ttys to take effect, you will need to reboot, or tell the init process to re-

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OFF THE NET

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read the ttys file by issuing this command (as root):

kill -HUP 1

Don't mess with the ttya or ttyb lines---they're for permanently connected terminals and do not allow sharing the port between dial-in's and dial-out's. Leave them "off".

DIAL OUT

For dialing out, I use C-Kermit 5A in a Terminal window. You can use the command line:

kermit -l /dev/cua -b 9600

where the "a" in "cua" selects serial port A, and the 9600 is the bit per second rate. I use 9600 since MNP 5, which supports compression, can sometimes require more than 2400 bps. It is important to use /dev/cua or /dev/cub and not any /dev/tty* to allow sharing the port for dial-in and dial-out. If you are using hardware flow control, like I do, then the command is instead:

kermit -l /dev/cufa -b 9600

You can get a ready-to-fly compiled kermit 5A for 2.x from cs.orst.edu in pub/next/binaries as kermit5a.170.bin20.tar.Z. You can extract the kermit executable using the command:

zcat kermit5a.170.bin20.
tar.Z | tar xvf -

and then put the kermit in a suitable directory (as root):

mkdirs /usr/local/bin
mv kermit /usr/local/bin

For kermit to have access to the /dev/cu* ports, it needs special permissions. You can grant them (as root) using these commands:

chown uucp /usr/local/bin/
kermit
chmod u+s /usr/local/bin/
kermit

You should not do this to a pre-5A kermit (e.g. 4E or 4F). For earlier versions of C-Kermit, you should instead change the permissions on /dev/cu* to allow rw access to all. However, I'd recommend getting a 5A kermit.

You may need to "bootstrap" yourself into kermit by downloading it through the modem. Here is a good technique: first, use cu to dial out:

cu -l /dev/cua -s 9600

and you will then be able to converse with your modem. In cu, at the beginning of a line, you can use the ~? command to get a list of special tilde commands. Like how to get out (~.). (By the way, in my opinion, the "tip" program is too much of a hassle to use, at least if you are only trying to get kermit.) Then dial up the host on which you have ftp'ed kermit from (I will assume it is a Unix machine). Use uuencode to print the binary:

uuencode kermit5a.170.
bin20.tar.Z kermit5a.170.
bin20.tar.Z

and when it is done, copy the contents of the Terminal window to an Edit window and save it as a file. (If you are using 1.0 or 1.0a, you will need to use Shell or Stuart, since Terminal in 1.0 does not scroll.) If you have MNP modems at both ends, then you can uudecode the file and you've got it. If not, then repeat the process and save it as a different file. Use diff to find where the files disagree, and use an editor on the host to see what those lines are supposed to be and fix them. However you do it, check the transfer using the "sum" command on your machine and the host on the uudecoded (.tar.Z) file.

SUMMARY

1. Make sure DCD and DTR are wired correctly on your cable, and that CTS isn't wired (unless you are using hardware flow control on a 68040 NeXT--in that case wire RTS and CTS as noted).

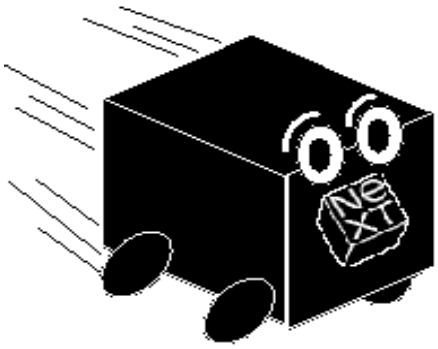
2. Convince the modem to respond to DTR and generate DCD appropriately, as well as answer the phone if it rings. (Also convince the modem to use RTS/CTS flow control for a 68040 NeXT, if desired.) Save the setup if you can.

3. Edit /etc/ttys and put in an "on" to enable dial-in's on the port with the modem (ttyda for port A, ttydb for port B). Change the baud rate and terminal type if desired. (If using hardware flow control on a 68040 NeXT, change it to ttydfa or ttydfb.)

4. Use /dev/cua or /dev/cua with your communication program, NOT /dev/ttya, /dev/ttyb, /dev/ttyda, or /dev/ttydb. (If using hardware flow control on a 68040 NeXT, use /dev/cufa or /dev/cufb instead.)

5. For dialing out, use C-Kermit 5A in a Terminal window (or a Stuart window, especially if you're still using 1.0 or 1.0a). Kermit needs to be given permission by root to use the /dev/cu* devices.

Good luck.



NeXT Press

Announcements from NeXT and 3rd party product suppliers about product releases, upgrades, bugs, and other matters of importance...

New on Compuserve: NeXT Forum

DATE: Tuesday, May 14th.

WHAT: The Grand Opening of the NEW NeXT Forum on CompuServe.

DETAILS:
The NeXT Forum is the FIRST forum to open on CompuServe that is *solely* dedicated to a single workstation platform - NeXT!

CompuServe, one of the first computer information services in the country, is accessable from around-the-world and is accessible by a *local phone number* by over 90% of the American population. CompuServe has 640,000 members world-wide.

THE FORUM:
The forum contains three parts: Message Section, Library Section, & Conference.

Message Section: This section allows you to leave messages, announcements, questions, answers, and general NeXT trivia.

Library Section: This section (like an archive site) offers a place to upload and download programs and other files in any on of several catagories.
Conference Section: This section allows for 'live' computer conferences with other NeXTer's from around the country (world). Conferences will be scheduled on a regular basis.

COMPUSERVE ADVANTAGE:
Until now, the only way that NeXTer's could get together via modem nationally, has been through Internet. However, Internet's access is limited and most of the new purchasers of NeXT do not have access to Internet, Usenet, or 'ftp'ing. On CompuServe over 90% of the NeXT users will have local number access where they can ask questions, get programs and information, and exchange idea's with other NeXT users. Much like an national user's group, only better.

HOW DO I GET ACCESS?
This is the easy part. CompuServe has set up a special program for NeXTer's. CompuServe will give you a FREE membership and $15.00 usage credit to get familiar with the system. There is no obligation and you may cancel you account at anytime.

For this special offer call: 1(800) 848-8199 and ask for representative #235. They will set you up with the *free membership* and the $15.00 credit.

The menu structure of Compuserve is intuitive and easy to use. If you are looking for something in particular just type 'find' and the name and hit <return>.

ACCESSING THE NeXT FORUM:
After logging on, type 'go nextforum' and follow the directions. That's all there is to it.

CONCLUSION:
This is the first CompuServe forum dedicated entirely to a single workstation platform (Sun doesn't even have a forum). If it is to be a success it needs your participation and the participation of other NeXTer's. For many, this is their only access to quick information, freeware programs, special information files relating to the NeXT, and 'live' conferencing with other NeXT users.

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NeXTPress

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The NeXT forum is a relaxed, friendly place where both the beginner and the advanced user will find something valuable. So if you want to make better use of your NeXT or if you only want to 'meet' with other NeXT users call the number above and join today.

A FINAL COMMENT:
CompuServe has over 200 forums for all kinds of interests, an Electronic Mall that is free of connect time, hundreds of information sources including daily news from AP, Washington Post, Reuter's, and UPI. You also can send email to other CompuServe members or to Internet, MCI, Telex, or by fax. (You can even compose and mail an old-fashioned letter <g> that will be sent from the nearest of seven locations around the country).

David Bowdish
76711.143@compuserve.com
Sysop of the NeXT Forum
rmNUG NeWS Editor
Rocky Mountain NeXT User's Group (rmNUG)
Executive board member

Motorola DSP Archive Server

How to access the Motorola DSP 56000 source file archive

How can you access the archive? Via ftp or email to an archive server.

EMAIL: Send a message (subject is ignored) containing the line
help
to
archive-server@cc.purdue.edu

You will be sent instructions on how to make the archive server send you the files as though you were ftp'ing (see below).

FTP: You may ftp to
sonata.cc.purdue.edu
128.210.15.30
nova.cc.purdue.edu
128.210.7.22

The files are located in
pub/nextDSP

The rules for ftp at this site are typical... don't abuse it. ftp'ing after business hours is always courteous.

Please note that I do not have any direct control over the files at this site. Any technical questions should be directed to the sysadmins there. They are nice enough to allow me to put up and maintain the archives on their machines, so I'd like you to be nice to them.

Although their system allows you to directly submit source to the archive there, I would appreciate it if you would send it my way first so I might try it out and decide where it best fits. Please contact me before sending any large amounts of source.

That reminds me... I'd like to maintain this as a source-only type resource. I'd like to avoid posting compiled source (i.e., binaries or .S19 files) since development systems are rarely alike for the 56000.

Right now I am looking for program source that does standard processing tricks with audio (chorusing, flanging, echoing, pitch shift, etc.). Also looking for Dr. Bub downloads, if you have any. I haven't been on that board for a while...

Thank you for your cooperation.

-Todd Day-
appmag!todd@hub.ucsb.edu

New Product: NeXT Serial & Parallel Port Expansion

Expand the NeXTStation with the SLAT-1 from UNINET

UNINET SLAT
High Performance Serial & Parallel Port Expansion for UNIX Workstations

- Easy expansion from 4 to 56 serial ports and 1 to 7 parallel ports
- No Internal workstation slot required
- Fully SCSI compliant. Co-exists with other SCSI devices.
- Highest performance serial ports available
- Available for SUN, DEC, IBM, SOLBOURNE, DATA GENERAL, MIPS, NeXT

At last, there is a whole new way to expand your workstation. SLAT (SCSI Local Area Technology) uses a unique technology which provides additional serial and parallel ports for a high degree of system flexibility and expandability. SLAT is a fully compliant SCSI device using the industry standard SCSI bus found

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on all of today's workstations, thus requiring no system bus slots. Now, even non-expandable and desktop workstations can have full access to peripheral devices such as modems, terminals, scanners and laser printers.

SLAT's high performance serial ports (upto 110 Kbaud) are ideal for todays demanding workstation applications, providing full modem support, including dial/in and dial/out on each port, and a high aggregate throughput rate. Capabilities such as modem pooling and multiple terminal data entry are now possible on entry level workstations. Centronics laser and dot matrix printers can be connected to the SLAT's parallel port. Access to ports is transparent and requires no modifications to operating system or applications software.

All products include Installation guide and power cable. Host software and SCSI cabling is required and sold separately.

TECHNICAL SPECIFICATIONS::

SERIAL I/O:
• RS-232-C, RJ45 pin female connectors

SERIAL LINE FORMATS:
• 5 to 8 data bits; 1 or 2 stop bits; odd,even,no parity

SERIAL DATA RATES:
• 50 baud to 110K baud, arbitrary baud rates supported
SERIAL FLOW CONTROL:
• Output flow control using XON/XOFF,CTS
• Input flow control using XON, XOFF, RTS, DTR

SERIAL MODEM CONTROL:
• Dial in/Dial out modem access on every line
• RTS, CTS, DTR, DSR, CD supported

COMBINED SERIAL DATA THROUGHPUT:
• 30,000 characters per second

PARALLEL I/O:
• Centronics parallel, DB25 connector

SCSI INTERFACE:
• 2 DB50 SCSI connectors

SCSI DATA THROUGHPUT:
• Greater than 2.5 Mbytes per second SCSI transfer rate

ENVIRONMENT:
• Operating Temperature 0C to 50C (32F to 122F)
• Non-operating temperature -20C to 60C (-4F to 140F)

PHYSICAL:
• Height 12.2 cm (4 3/4 in.)
• Width 24.4 cm (9 5/8 in.)
• Depth 27.5 cm (10 13/16 in.)
• Net Weight 2.95 kg (6.5 lbs.)

REGULATORY:
• Meets or exceeds FCC class A part 15

ELECTRICAL:
• Standard: 110 VAC,47-440 Hz, 2 watts
• On request only: 110-240 VAC,50/60 Hz, 2 watts

WARRANTY: ONE YEAR PARTS AND LABOR
(RMA number required)

The SLAT-1 is available direct from the manufacturers at:

UNINET
1209 East Warner Ave.
Santa Ana, CA 92705
Tel: 714 546 1100
Fax: 714 546 3726
Contact: John Spongr or Paul Hammond
email: sales@cpd.com

New Product: MidasPlus for NeXT

MidasPlus is a collection of programs developed by the Computer Graphics Laboratory at the University of California, San Francisco.

The main graphics display program is designed for the display and manipulation of macromolecules such as proteins and nucleic acids.

Several ancillary programs allow for such features as computation of molecular surfaces and electrostatic potentials, and the selection of an active site region within a molecule. Because of our own research needs, emphasis has been placed on the interactive selection, manipulation and docking of drugs and receptors. MidasPlus was initially developed in the early 1980's, but until recently has run only on high performance interactive graphics workstations such as the Silicon Graphics IRIS.

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Because of the lack of specialized graphics hardware on the NeXT for doing three dimensional image rotations and translations, the NeXT version of MidasPlus can effectively handle only small proteins, nucleic acids and drug models. A color system is essential for serious modeling work, although the program is capable of running on a black and white system as well. As with most workstations, the more main memory you have the better the application will perform. If you plan to work with many models, 300MB of disk should be considered an absolute minimum.

MidasPlus is licensed on a per department or institution basis. The license fee is $350, which includes complete source code, floppy disk distribution media, documentation, and our administrative overhead costs. The software runs on release 2.0 or higher only. Support and training are not available, although we do welcome bug reports and periodically issue update releases that incorporate bug fixes. Please note that we are an academic institution and not a commercial software company.

If you are interesting in obtaining MidasPlus write or send email to:

MIDAS Software Distribution
c/o Norma Belfer
Computer Graphics Laboratory
School of Pharmacy
University of California
San Francisco, CA 94143-0446

email: norma@cgl.ucsf.edu

(email inquiries be sure to include your postal mailing address).

A license agreement will be sent to you which must be signed and returned with payment. We anticipate the initial NeXT distribution will be ready by July 1st, 1991. Distribution media is floppy disk, however if you supply a blank optical disk with your completed license agreement we will use that instead.

Reading: Object-Oriented Programming and Music

The Well-Tempered Object
Musical Applications of Object-Oriented Software Technology

A Structured Anthology on Software Science and Systems based on Articles from Computer Music Journal 1980-89: Compiled and edited by Stephen Travis Pope and published by MIT Press, 1991

The Well-Tempered Object is based on a collection of articles that appeared in Computer Music Journal over the space of ten years relating to the application of object-oriented (OO) software technology--the most important new software engineering technology of the 1980s--to various musical applications. It consists of articles from Computer Music Journal 4(4), 8(5), 10(4) and 13(2) along with new chapters and updates to the original texts as addenda. The authors describe the application of OO technology to a wide range of areas of computer music and digital audio signal processing including music representation and composition, real- time performance, and digital signal processing (DSP). A number of popular OO programming languages are represented, including Lisp, Smalltalk-80, and ObjectiveC.

Keywords/Topics

Music software, object-oriented programming, object-oriented software design, music representation, composition and performance, graphical user interfaces, DSP programming, single and multiple inheritance, Actors, OO user interface systems.

Flavors Band, FORMES, Kyma, Platypus, SoundKit, MusicKit, MODE, HyperScore ToolKit, CreationStation, Javelina, VDSP, TTrees, Nutation.

NeXT, Macintosh, Sun SPARCstation, LISP, Smalltalk-76 & -80, ObjectiveC, ACT-1, and DSP languages.

Language and methodology introductions, tool and application reports, extensive bibliographies, tutorials on OO programming and OO design.

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Author Contact Addresses

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Virtual Digital Signal Processing in an Object-Oriented System
David K. Mellinger, G. E. Garnett and Bernard Mont-Reynaud

Addresses of Authors

Details
Compiled and Edited by Stephen Travis Pope (Editor of Computer Music Journal)

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Available from:
MIT Press, 55 Hayward St., Cambridge, Massachusetts 02142 USA
Tel: (617) 625-8569

New Product: Squash

Agog announces data compression and backup utility for NeXT

GRAND LEDGE, MICH.
MAY 17, 1991 The first file compression and floppy backup utility product for the NeXT computer was announced today by Agog, Incorporated.

The new utility, called Squash, uses lossless compression and allows NeXT users to compress data and backup files and folders to floppy disks. Files and folders are compressed at backup time, requiring substantially fewer floppies for storage. For example, the on-line documentation, which normally takes up more than 20 mb on the hard disk, can be archived with Squash to just two 2.88 mb floppy disks.

The application was specifically designed for the NeXT platform, with an extremely intuitive, easy-to-use interface. Files can be compressed from within the Workspace Manager with just one keystroke. Compressed files which appear as icons that look as if they are being squashed can then be decompressed and opened in their original application with one double-click of the mouse.

Squash also has an option that will let users save disk space by compressing old files and folders when the machine is not in usePutilizing their computers more fully. Additional features of Squash include the following:

• Files can be dropped on Squash from within any application using the Services Menu.

• Large files can be split into pieces and rejoined by double-clicking on one of the pieces.

• A status panel displays estimated time to completion.

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• Entire users manual is on-line, complete with graphics.

• Files and subfolders can be extracted from an archive without having to extract the entire squashed folder.

Agog's utility meshes well with NeXT's strategy of using 2.88 mb floppy disks as a standard coin of data exchange,: said Max Henry, vice president, developer partnerships at NeXT Computer, Inc.

Squash is an extremely affordable way for NeXT customers to get the most out of their floppy drives, and its elegantly constructed, fluid user interface makes the product a joy to use.

A free application called UnSquashOnly is included with Squash and can be distributed with squashed files and archives so that others may open squashed files.

Squash, which is currently available, retails for $99.95 for a single-CPU license package and $899.50 for a ten-CPU license package.

Agog, Incorporated
13780 North River Highway
Grand Ledge, Michigan 48837
email: nola@agog.com
Nola Cockroft (517) 627-2186

DataPhile Database

For those that need a flat file data base, the DataPhile (beta version) is out there on the archive server: sonata.cc.purdue.edu under pub/next/submissions.

Using the Adobe PostScript File Server

Editors' Note: The Adobe PostScript File Server is an automated e-mail system which allows users to request files stored at the Adobe Systems archive site. Excerpted below are the help file for using the server, and indexes for the Documents and Programs archive subdirectories.

Noteworthy among the Documents is the series of 9 technical notes discussing programming with Display PostScript on the NeXT. Programs contains the source code for many of the examples discussed in the Documents files, as well as program listings for the PostScript Blue and Green books. The file epsfinfo.ps is an especially useful program for turning a vanilla PostScript file into an Encapsulated PostScript File (among other things, it computes those troublesome bounding boxes automatically...)

Subject: How to use the PostScript File Server
From: Adobe PostScript File Server <ps-file-server>

This message comes to you from the PostScript file server at Adobe Systems, ps-file-server@adobe.-com. It received a message from you asking for help.

The file server is a mail-response program. That means that you mail it a request, and it mails back the response. The file server does not have much error checking. If you don't send it the commands that it understands, it will just answer "I don't understand you".

The file server has 4 commands. Each command must be the first word on a line. The file server reads your entire message before it does anything, so you can have several different commands in a single message. The file server treats the "Subject:" header line just like any other line of the message. You can use any combination of upper and lower case letters in the commands.

The archives are organized into a series of directories and subdirectories. Each directory has an index, and each subdirectory has an index. The top-level index gives you an overview of what is in the subdirectories, and the index for each subdirectory tells you what is in it.

If you are bored with reading documentation and just want to try something, then send the server a message containing the line

send index programs

When you get the index back, it will give you the names of all of the program files in the archive; send the server another message asking it to send you the files that you want:

send programs ehandler.ps

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If you are using a mailer that understands "@" notation, send to ps-file-server@adobe.com. If your mailer deals in "!" notation, try sending to {someplace}!adobe!ps-file-server; for example:

decwrl!adobe!ps-file-server

For other mailers, you're on your own.

The server has 4 commands:

"help" command: The command "help" or "send help" causes the server to send you the help file. No other commands are honored in a message that asks for help (the server figures that you had better read the help message before you do anything else).

"index" command: If your message contains a line whose first word is "index", then the server will send you the top-level index of the contents of the archive. If there are other words on that line that match the name of subdirectories, then the indexes for those subdirectories are sent instead of the top-level index. For example, you can say:

index
or
index programs
or
index AFMfiles

You can then send back another message to the file server, using a "send" command (see below) to ask it to send you the files whose name you learned from that list.

Note: "index programs" and "send index programs" mean the same thing: you can use the "send" command instead of the "index" command, if you want, for getting an index.

If your message has an "index" or a "send index" command, then all other "send" commands will be ignored. This means that you cannot get an index and data in the same request. This is so that index requests can be given high priority.

"send" command: If your message contains a line whose first word is "send", then the file server will send you the item(s) named on the rest of the line. To name an item, you give its category and its name. For example:

send AFMfiles AvantGarde-BookOblique
or
send programs ehandler.ps

Once you have named a category, you can put as many names as you like on the rest of the line; they will all be taken from that category. For example:

send AFMfiles AvantGarde-Book AvantGardeBookOblique Helvetica

Each "send" command can reference only one directory. If you would like to get one AFMfile and one program, you must use two "send" commands, one beginning "send AFMfiles" and the other beginning "send programs".

You may put as many "send" commands as you like into one message to the server, but the more you ask for, the longer it will take to receive. See "FAIRNESS", below, for an explanation. Actually, it's not strictly true that you can put as many "send" commands as you want into one message. If the server must use uucp mail to send your files, then it cannot send more than 100K bytes in one message. If you ask for more, the server will try to send you the files, and then the message will probably bounce back.

See the Documents index for more information on retrieving large amounts of data.

"path" command: The "path" command exists to help in case you do not get responses from the server when you mail to it.

Sometimes the server is unable to return mail over the incoming path. There are dozens of reasons why this might happen. If you happen to know a way to circumvent particular kinds of mailer problems, you may put in a "path" command to override the normal attempt at returning your mail.

If you put in a "path" command, then everything that the server mails to you will be mailed to that address, rather than to the return address on your mail. For example, if you say:

path pyramid!rutgers!zakkaroo!jj

then all mail sent by the server will be sent to that address.

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EXAMPLES:

1) Find out the list of all the top-level directories that are in the archive.

Send this message:

To: ps-file-server@adobe.com
Subject: hi there

send index

2) Get some AFM files and a program from the archive (you have learned their file names from the list that was sent to you in step 1).

To: ps-file-server@adobe.com
Subject: send AFMfile Palatino-Roman

send programs ehandler.ps
send AFMfiles Sonata

3) Get the error handler program, and send it over the best path to your site:

To: myvax!ihnp4!sun!decwrl!adobe!ps-file-server

path myname@myhost.com
send programs ehandler.ps

NOTES:

The file server acknowledges every request by return mail. If you don't get a message back in a day or two (depending on how close you are to adobe on the network) you should assume that something is going wrong, and perhaps try a "path" command. If you aren't getting anywhere and you don't know a wizard to help you, try putting:

path myname@site.uucp

in your message, where "myname" is your mailbox name and "site" is the uucp name of your machine.

The delays in sending out large items from the archives are intentional, to make it difficult to get copies of everything in the archives. If you are new to the network and would like to get all back issues of everything, you should post a request to a regional newsgroup asking whether someone who is geographically near you can provide them.

Don't send mail with long lines. If you want to ask for 20 files in one request, you don't need to put all 20 of them in one "send" command. The file server is quite able to handle long lines, but before your mail message is received by the file server it might pass through relay computers that will choke on long lines.

The file server does not respond to requests from users named "root", "system", "daemon", or "mailer". This is to prevent mail loops. If your name is "Bruce Root" or "Joe Daemon", and you can document this, I will happily rewrite the server to remove this restriction. I have it on good authority that Norman Mailer does not use network mail.

FAIRNESS:

The file server contains many safeguards to ensure that it is not monopolized by people asking for large amounts of data. The mailer is set up so that it will send no more than a fixed amount of data each day. If the work queue contains more requests than the day's quota, then the unsent files will not be processed until the next day. Whenever the mailer is run to send its day's quota, it sends the requests out shortest-first.

The reason for all of these quotas and limitations is that the delivery resources are finite, and there are many people who may like to make use of the archive.

THANK YOU:

Thank you for your patience in reading this message, and for using the Adobe PostScript File Server. Any suggestions are welcome. For now, we are not in a position to archive lots of other's user files, but if you have some specially useful debugging tools or other interesting pieces of PostScript, please send a copy of them to the moderator (ps-file-person@adobe.com).

Index of Documents from Adobe PostScript Archive File Server (updated Mar 1 19:05 Documents/.index)

This is an index of Documents currently available from the PostScript File Server. Most of these documents are in PostScript language form (that is, they are actual source code which you can send to your PostScript printer), and should run correctly on any PostScript printer.

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These files are requested with a command of the form:
send Documents long.help

REALLY IMPORTANT: Some of these document files are larger than 100k. Most UUCP mail transport systems will bounce this mail back to the server as being too large. PLEASE, if you need a copy of struct.ps or PPDformat.ps or one of the large files, either ask for the .ps.Zba version (which has been run through "compress" and "btoa" to make it smaller) or send SEPARATE REQUESTS, one for each of the pieces of the file you need (for example, struct.ps.A and struct.ps.B). If you just ask it to send struct.ps, it will probably just waste time, because it cannot be delivered. Similarly, DON'T request struct.ps.A and struct.ps.B in the SAME message. The server will try to cram the reply into one message, too, and then you're back to the same file size limitation problem. [The server is not smart enough to break many requests from one message into several reply messages. Sorry.]

YOU need to be aware of the amount of data you are asking for, and break those requests across multiple mail messsages, if needed. That is why you will see many similar files for the same document-- because it is a big one. Don't retrieve them ALL, just those that are packaged the way that you want. See the FILE EXTENSIONS paragraph below. Thanks.

PRINTING: Some of you are running old versions of TranScript (Unix spooling product) and have old LaserWriters. If you have PAGE REVERSAL turned on in older versions of TranScript (prior to version 2.0, I think), you will have problems with these documents. The symptom of this problem is the following error message (or no printout whatsoever):

%%[Error: undefined; Offending Command: BEGINPAGE]%%

If you see this error OR if nothing prints and your pages normally come out of the printer with the last page first, then ADD ONE LINE to the beginning of the PostScript file before you print it. This line should contain just the two %! characters, and a carriage return. The first two lines of the file would then look like this:

%!
%!PS-Adobe-2.1

You should probably also update your software. You can call Adobe at 415-961-4400 to find out about upgrades to TranScript.

NOTE: Many of these documents did not preview on NeXT machines. This was because the PostScript language file was not page-independent. Those files were recently fixed, and should now preview/print from NeXT machines. [If you're interested in the script that fixed the problem, look in the Programs index.] March 22, 1990

FILE EXTENSIONS: The following is a list of various file extensions used on this server, and an explanation of what they mean. You will see that some documents on this server are packaged in a number of different ways. This is due to the size or format of the various files. For example, large documents may be available as HUGE PostScript language files, as compressed files, and also as several PostScript language files that when concatenated make up the original HUGE file. This is to accommodate mailers that cannot handle large chunks of data.

When retrieving a document, look for a packaging that is suitable for your needs and your system. There is no sense in retreiving the same document in all of the different forms since when you print it you will always get the same thing.

<foo>.ps This is the PostScript language file for document <foo>. This file can be sent directly to the printer.

<foo>.ps.& Where '&' is a series of capital letters (A, B, C, etc.). This is the original <foo>.ps file broken down into mulitple pieces. When concatenated, all of the <foo>.ps.& files will produce the original <foo>.ps file that can be sent directly to a printer. Use a SEPARATE request for each piece of the file.

<foo>.ps.Zba This is the original <foo>.ps file that was run through the UNIX(TM) utilities "compress" and "btoa". Don't retrieve these files unless you have "atob" and "compress". ["atob" source is on the server in the Programs category.]

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<foo>ps.Zba.& Where '&' is a series of capital letters (A, B, C, etc.). This is the original <foo> .ps.Zba file broken down into multiple pieces. When concatenated, all of the <foo>.ps.Zba.& files will produce the original <foo>.ps.Zba file that can be run through "atob" and "compress" to get the original PostScript file. Use a SEPARATE request for each piece of the file. ["atob" source is on the server in the Programs category.]

<foo>.ps.Zuu This is the original <foo>.ps file that was run through the UNIX(TM) utilities "compress" and "uuencode". Don't retrieve these files unless you have "uudecode" and "compress" [uuencoded files will start to disappear now that the "atob" source is available on the file server.]

<bar>.txt This is just an ASCII file.

<bar>.info This is just an ASCII file.

DO NOT use asterisks (i.e. wild cards) when requesting files.

RECENT UPDATES:

RedBook_errata.txt (updated)
ATM_mac_advtype.ps (updated)
Type1Updates.ps (new)
StemSnap.ps (new)

NOTE: The DPS* documents are *huge*. You can also obtain a hardcopy in a nice binder at a small cost (for postage & binder) by calling the Developer Support line at (415) 961-4111.

Documents:

ABFformat.ps 50129 Mar 22 1990

This document describes the Adobe Binary Screen Font Format. This is currently used for PC screen font distribution, and may be used for Display PostScript hand-tuned bitmap distribution in the future.

AFMformat.ps 168949 Mar 12 1990
AFMformat.ps.A 85522 Mar 12 1990
AFMformat.ps.B 83427 Mar 12 1990
AFMformat.ps.Zba 94118 Mar 12 1990
AFMformat.ps.Zuu 102396 Mar 12 1990

This is version 3.0 of the AFM (Adobe Font Metrics) file format. AFM files contain character widths and bounding boxes in a human-readable and machine-parseable format. This version is upward compatible with version 2.0. It extends version 2.0 by containing keywords for specifying metrics for non-roman fonts. The first fonts that will use version AFM version 3.0 are the Kanji fonts. You can retrieve a large PostScript language file, OR the same file broken into 2 pieces, OR a compressed/btoa version, OR a compressed/uuencoded version.

AIformat.ps 193846 Jul 20 1990
AIformat.ps.A 97186 Jul 20 1990
AIformat.ps.B 96660 Jul 20 1990
AIformat.ps.Zba 98846 Jul 20 1990

This is a document describing the Adobe Illustrator(R) document format. It covers several versions of Adobe Illustrator, including Adobe Illustrator 88, Adobe Illustrator -- Windows Version, and Adobe Illustrator Japanese Edition.

BDFformat.ps 64439 Mar 22 1990

This document describes the format of the bitmap font distribution format. It is only used for distributing screen fonts in a generic way, and is not used for specific product-oriented bitmap screen fonts.

BinComm.ps 49714 Jul 18 1990

This document describes a protocol for communications between a PostScript(R) printer and a host computer using an 8-bit wide serial or parallel channel.

CharHeights.ps 214474 Aug 30 1990
CharHeights.ps.A 80575 Aug 30 1990
CharHeights.ps.B 61954 Aug 30 1990
CharHeights.ps.C 71945 Aug 30 1990
CharHeights.ps.Zba 106569 Aug 30 1990
CharHeights.ps.Zba.A 59183 Aug 30 1990
CharHeights.ps.Zba.B 47386 Aug 30 1990

This document describes why character height variations can occur

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even when the same font program is used but on output devices of different resolutions.

Cover_NeXT.ps 29080 Aug 30 1990
This is a cover sheet for the divider section of your binder that holds the Technical Notes covering the Display PostScript system on the NeXT machine.

DPS_errata.txt 2255 Jan 3 12:42
This file contains errata for the Display PostScript Documentation.

DPS_pswrap.ps 102876 Feb 13 1990
DPS_pswrap.ps.A 61428 Feb 13 1990
DPS_pswrap.ps.B 41448 Feb 13 1990
DPS_pswrap.ps.Zba 52217 Feb 13 1990
This is a document describing the pswrap facility of Display PostScript system. pswrap provides a way to bundle PostScript language operators into C-language callable procedures.

EPSF.ps 101421 Mar 22 1990
EPSF.ps.A 54124 May 25 1990
EPSF.ps.B 47297 May 25 1990
EPSF.ps.Zba 58216 May 25 1990
This specifies the Encapsulated PostScript file format. EPS files are used primarily as illustrations that can be imported into other documents. The EPS file format is a set of guidelines for PostScript language files so that nesting them works well, and it also includes specification for a companion bitmap (in either Mac specific, MS-DOS specific or device independent format) that can be used for screen display.

NX_Clock.ps 175715 Jul 20 1990
NX_Clock.ps.A 91378 Jul 20 1990
NX_Clock.ps.B 84337 Jul 20 1990
NX_Clock.ps.Zba 90111 Jul 20 1990
NX_Clock.ps.Zuu 98028 Jul 20 1990
This document is the sixth in a series of technical notes that cover issues about programming for the Display PostScript system on a NeXT machine. This document discusses issues related to user objects and graphics state objects.

NX_CtrlPts.ps 187063 Aug 1 1990
NX_CtrlPts.ps.A 93857 Aug 1 1990
NX_CtrlPts.ps.B 93206 Aug 1 1990
NX_CtrlPts.ps.Zba 102763 Aug 1 1990
NX_CtrlPts.ps.Zba.A 59183 Aug 1 1990
NX_CtrlPts.ps.Zba.B 43580 Aug 1 1990
NX_CtrlPts.ps.Zuu 111802 Aug 1 1990
This document is the seventh in a series of technical notes that cover issues about programming for the Display PostScript system on a NeXT machine. This document discusses issues related to displaying control points (or other objects) in a consistent fashion.

NX_Dial.ps 141975 Mar 22 1990
NX_Dial.ps.A 71917 Mar 22 1990
NX_Dial.ps.B 70058 Mar 22 1990
NX_Dial.ps.Zba 85827 Mar 22 1990
NX_Dial.ps.Zuu 93365 Mar 22 1990
This document is the fifth in a series of technical notes that cover issues about programming for the Display PostScript system on a NeXT machine. This document discusses issues related to efficient path construction and rendering, including the use of user paths.

NX_Hello.ps 143974 Mar 22 1990
NX_Hello.ps.A 72778 Mar 22 1990
NX_Hello.ps.B 71196 Mar 22 1990
NX_Hello.ps.Zba 91230 Mar 22 1990
NX_Hello.ps.Zuu 99252 Mar 22 1990
This document is the second in a series of technical notes that cover issues about programming for the Display PostScript system on a NeXT machine. This document briefly discusses the use of the NeXT Interface Builder application.

NX_HitDetect.ps 212170 Aug 30 1990
NX_HitDetect.ps.A 71449 Aug 30 1990
NX_HitDetect.ps.B 78512 Aug 30 1990
NX_HitDetect.ps.C 62209 Aug 30 1990
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NX_HitDetect.ps.Zba 99986 Aug 30 1990
This document is the eighth in a series of technical notes that cover issues about programming for the Display PostScript system on a NeXT machine. This document discusses issues related to hit detection, zooming, and redrawing. A uuencoded version is not available, since you can get the atob sources from the Programs directory. Retrieve that utility and the btoa compressed version of this file.

NX_Lines.ps 294982 Mar 22 1990
NX_Lines.ps.A 80138 Mar 22 1990
NX_Lines.ps.B 75283 Mar 22 1990
NX_Lines.ps.C 66791 Mar 22 1990
NX_Lines.ps.D 72770 Mar 22 1990
NX_Lines.ps.Zba 182472 Mar 22 1990
NX_Lines.ps.Zba.A 94733 Jul 20 1990
NX_Lines.ps.Zba.B 87739 Jul 20 1990
NX_Lines.ps.Zuu 198542 Mar 22 1990
This document is the third in a series of technical notes that cover issues about programming for the Display PostScript system on a NeXT machine. This document discusses the use of wraps versus single operator calls.

NX_Overview.ps 83948 Mar 22 1990
NX_Overview.ps.Zba 49140 Mar 22 1990
NX_Overview.ps.Zuu 53449 Mar 22 1990
This document is the first is a series of technical notes that cover issues about programming for the Display PostScript system on a NeXT machine. While these documents contain code examples that specifically target the NeXT machine, some of the information is useful for programming on any platform that uses the Display PostScript system.

NX_Scroll.ps.A 86606 Aug 30 1990
NX_Scroll.ps.B 95581 Aug 30 1990
NX_Scroll.ps.C 89316 Aug 30 1990
NX_Scroll.ps.D 93958 Aug 30 1990
NX_Scroll.ps.E 89214 Aug 30 1990
NX_Scroll.ps.F 97081 Aug 30 1990
NX_Scroll.ps.G 93675 Aug 30 1990
NX_Scroll.ps.H 98556 Aug 30 1990
NX_Scroll.ps.I 98954 Aug 30 1990
NX_Scroll.ps.J 87681 Aug 30 1990
NX_Scroll.ps.K 94994 Aug 30 1990
NX_Scroll.ps.Zba 547904 Aug 30 1990
NX_Scroll.ps.Zba.A 94733 Aug 30 1990
NX_Scroll.ps.Zba.B 94800 Aug 30 1990
NX_Scroll.ps.Zba.C 94800 Aug 30 1990
NX_Scroll.ps.Zba.D 94800 Aug 30 1990
NX_Scroll.ps.Zba.E 94800 Aug 30 1990
NX_Scroll.ps.Zba.F 73971 Aug 30 1990
This document is the ninth in a series of technical notes that cover issues about programming for the Display PostScript system on a NeXT machine. This document discusses issues related to scrolling. This document is an extremely large PostScript language file (1 Mb). You can retrieve that file broken into 11 pieces, OR a compressed/btoa version, OR the compressed/btoa version broken into 6 pieces. Get the sources for atob from the Programs directory.

NX_StrAdj.ps 105120 Mar 22 1990
NX_StrAdj.ps.A 54418 Mar 22 1990
NX_StrAdj.ps.B 50702 Mar 22 1990
NX_StrAdj.ps.Zba 60870 Mar 22 1990
NX_StrAdj.ps.Zuu 66211 Mar 22 1990
This document is the fourth in a series of technical notes that cover issues about programming for the Display PostScript system on a NeXT machine. This document discusses the automatic stroke adjustment feature that is present in Display PostScript systems.

RedBook_errata.txt 2888 Jan 17 15:00
This file contains errata information for the Postscript Language Reference Manual, SECOND EDITION (also known as the "red book".)

book.info 1540 Jan 16 13:23
This file contains brief information on the four Adobe PostScript language books and how to order them.

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PostScript Server

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language.ps 49060 Jun 6 1989
This document describes PostScript language extensions made since the "red book" specification was published.

long.help 8482 May 13 1990
This is a long-winded explanation of how to use the server.

music.ps 57963 Mar 22 1990
This is a document describing some of the technical design aspects of the music notation font, Sonata. It is very useful for those writing music-setting applications.

residentfonts.info 4795 Feb 7 1990
This file contains information on some common groupings of fonts that are often resident in various PostScript interpreters from Adobe.

textcalc.ps 48793 Mar 22 1990
This document describes extremely simple algorithms for calculating line breaks and centering of proportional text.

Programs:

NX_Clock.tar.Zba 33560 Sep 5 1990
NX_Clock.tar.Zuu 36487 Sep 5 1990
This file contains the source code for the sample application that is discussed in the NX_Clock.ps document (located in the Documents category). The app contains various ways of using user objects and graphics state objects. This file has been tar'red, compressed and btoa encoded (or uuencoded) on the NeXT machine. You must have the UNIX(R) utilities btoa (source available here) or uudecode, uncompress and tar in order to extract the application source files from this file.

NX_CtrlPts.tar.Zba 32607 Sep 5 1990
NX_CtrlPts.tar.Zuu 35453 Sep 5 1990
This file contains the source code for the sample application that is discussed in the NX_Ctrl Pts.ps document (located in the Documents category). The app contains various ways of displaying control points (or any arbitrary shape).

NX_Dial.tar.Zba 43348 Sep 5 1990
NX_Dial.tar.Zuu 47138 Sep 5 1990
This file contains the source code for the sample application that is discussed in the NX_Dial.ps document (located in the Documents category). The app contains various ways of using user paths to draw a large number of hash marks.

NX_Hello.tar.Zba 11026 Sep 5 1990
NX_Hello.tar.Zuu 11969 Sep 5 1990
This file contains the source code for the sample application that is discussed in the NX_Hello.ps document (located in the Documents category). The app is used as a very simple introduction to the NeXT Interface Builder application.

NX_HitDetect.tar.Zba 56561 Sep 5 1990
NX_HitDetect.tar.Zuu 61523 Sep 5 1990
This file contains the source code for the sample application that is discussed in the NX_HitDetect.ps document (located in the Documents category). The app shows various techniques for handling hit detection, zooming, and redrawing in Display PostScript(R) systems, such as the NeXT machine.

NX_Lines.tar.Zba 26551 Sep 5 1990
NX_Lines.tar.Zuu 28861 Sep 5 1990
This file contains the source code for the sample application that is discussed in the NX_Lines.ps document (located in the Documents category). The app shows the use of single operator calls and wraps.

NX_Scroll.tar.Zba 79952 Sep 5 1990
NX_Scroll.tar.Zuu 86978 Sep 5 1990
This file contains the source code for the sam-

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PostScript Server

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ple application that is discussed in the NX_-Scroll.ps document (located in the Documents category). The app shows various techniques for handling scrolling in Display PostScript(R) systems, such as the NeXT machine.

NX_StrAdj.tar.Zba 22540 Sep 5 1990
NX_StrAdj.tar.Zuu 24494 Sep 5 1990
This file contains the source code for the sample application that is discussed in the NX_Str-Adj.ps document (located in the Documents category). The app shows how to take advantage of the automatic stroke adjustment present in Display PostScript(R) systems, such as the NeXT machine.

PSlinewrap.c 5280 Mar 9 1990
This C program filters a PostScript program and wraps long lines. It is intended to help with programs that contain very few carriage returns or that have string bodies that exceed line length limitations. It defaults to wrapping lines at 78 characters, for maximum compatibility, but has options to allow any value to be specified. Note: this version of the program has been slightly modified to work under VMS.

bluebook.shar 44028 Mar 16 1990
This is a shell archive file containing the cookbook program listings from the Blue Book ("PostScript Language Tutorial and Cookbook", available from Addison-Wesley).

btoa.shar 8230 Aug 30 1990
This is the source to the "btoa" and "atob" utilities. The "shar" file includes atob.c, btoa.c and btoa.1, the UNIX "man" page for both utilities. This utility is useful for unconverting the compressed/btoa versions of documentation in the Documents category and the compressed tar files lin this category.

chessfont.ps 58548 Jun 22 1989
This is the Adobe chess font "Cheq", created by John Renner. It is an ASCII downloadable version of the font that is not in any particular font format for a specific platform. See also "chessfontUNIX.shar" and "chessfontMAC.shar" for the font bundled with other useful files like screen fonts and AFM files. If you just want the font, it is available in this file separately for convenience.

chessfontUNIX.shar 69840 Jun 22 1989
This is the Adobe chess font "Cheq" in ASCII downloadable format along with the AFM file, a TeX .PL file, and an example program that prints out a font sample.

ehandler.ps 2761 Jul 27 1988
A downloadable PostScript file that will help debugging efforts by printing out the current page, the PostScript error message, and an operand stack trace.

epsfinfo.ps 17328 Sep 8 1990
This is a PostScript language procset whose procedures redefine standard marking operators so that they calculate bounding box information and font usage information for other PostScript language files that are executed after it. This information is useful for turning a PostScript file into an EPS file. An Adobe engineer quickly put this together for other reasons, but thought it might be useful to others. Read the comments in the file itself. Use at your own risk; perfection is neither promised nor implied. Comments are appreciated; send to ps-file-person@adobe.com.

fixFM.script 889 Mar 23 1990
This is a simple UNIX shell script that uses awk to fix PostScript language files that are produced from Frame Maker 2.0 on the Sun. The problem is that the files generated are not page independent and therefore fail to execute properly in some environments where page independence is strictly enforced (such as the NeXT

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PostScript Server

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preview app). This program is NOT a general purpose fix-up program. It ONLY works for files generated from Frame Maker 2.0 on the Sun.

fontdir.ps 2840 Mar 9 1990
This program produces a list of fonts back from the printer to the host. See also the Green Book programs.

greenbook.shar 49054 Jun 3 1988
This is a shell archive file containing the program listings from the Green Book ("PostScript Language Program Design", available from Addison-Wesley).

makenarrow.ps 1945 Mar 16 1990
This file contains a PostScript language routine for defining a new "narrow" font based on an existing font.

packPS.shar 13206 Mar 16 1990
This C program is a Unix filter that takes a PostScript language program and removes any syntactically unnecessary white space and comments. The files are reduced somewhat in size, although if the file will ever be read by humans again, running it through this program may not be a good idea.

psformat.shar 10743 Mar 16 1990
This file contains a makefile, C program, and "lex" source file for a program formatting tool. It takes PostScript programs and rearranges them according to some indentation rules (makes the programs easier to read and maintain).

sort.ps 3106 Mar 9 1990
This file contains a few routines for doing insertion sorts in PostScript. Can be useful for various things like sorting a font list before sending it back to the host (see "fontdir.ps" for an example of this).

still.ps 79028 Mar 9 1990
This is a PostScript language program that will help you "distill" an arbitrary PostScript program into a simpler one that produces the same output. Use at your own risk, but it does some very interesting things. Very useful as a development tool and for making non-portable documents into portable documents.

timepages.ps 3647 Mar 9 1990
This is a file which will help with timing tests. It adds a time stamp to a page as it is being printed indicating the execution time of the file, including rasterization time. There is some documentation in the file itself.

June Intro

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SCaNeWS: thanks to everyone who pointed out to us that one of our imported .tiff files was corrupt. Also available in the submissions directory at nova is the Improv API kit, a C-compatible programming toolkit providing some of the functionality of the PC Lotus 1-2-3 macro facility as well as the ability to acess Improv from independent applications.

This month in *SCaNeWS* we're pleased to have a new article by member Robert Thille, who has been working on a version of the Macintosh game Ishido for the NeXT. "Off the Net" has a peripheral bent this month, with how-to articles for connecting a modem or a MIDI keyboard to a NeXTstation. And for those of you who have occasion to interact with the NeXT's Display PostScript interpreter, "Using the Adobe PostScript File Server" introduces you to a useful service provided by Adobe Systems: an e-mail accessible archive of PostScript documentation and programs.

Our first meeting at UCLA was a resounding success, with Chet Kapoor and Allen Denison offering a capable tour of the NeXTdimension system. After a month off in July (no meeting

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June Intro

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or newsletter), we'll be back at UCLA in August with a representative from Adobe demonstrating Illustrator: should be another exciting meeting. Regrettably, our NeXT-donated funds are rapidly diminishing, and starting with the August meeting $2.00 dues will be solicited.

This month's meeting at CSULB will have a networking focus, with 10 NeXTstations available for attendees to acquire some "hands-on" experience with network applications like Mail, NewsGrazer, and Touch (the latter two provide graphical front-ends for Usenet and anonymous ftp for terminal-shy users). We'll also be showing a new video from NeXT, "NeXT Product Video Featuring NeXTdimension," which discusses interpersonal computing and inter-application messaging in the NeXT environment, with a focus on NeXTmail. And, as an added bonus, we'll be raffling off an OT_Palettes Mathematica Palette at the June meeting: perhaps the lucky winner would like to write a review of the Palette for the newsletter? Thanks to OT_Palettes for donating the software.

Shipping Third Party Products 3/27/91

Business Productivity

Adamation, Inc.

Who's Calling?–Telephone tracking system with multiuser access, plus voice response; allows you to track calls, schedule meetings, keep yourself organized. 415-452-5252

HSD Microcomputers, Inc.

OCR Servant-Limited Edition–Optical Character Recognition software available to users only through the Services menu. 415-964-1400

Informix

Wingz–Spreadsheet with 3D graphics and powerful Hyperscript language. 415-926-6651 or 913-599-7330.

Lighthouse Design

Diagram!–A drawing package that makes creating org charts, labled diagrams, etc. easy and which supports links to other NextStep apps. 1-800-366-2279 or 301-907-4621

Lotus DevelopmentCorporation

Lotus Improv–Next generation spreadsheet offering English formulas, multiple views on the data, linked tables, and presentation graphics. 617-577-8500

Stained Glass Software

Calendoscope–Networked day/week/month/year calendar for individuals and groups. 415-636-5100

Visual Understanding Systems (VISUS)

PaperSight Lite 1.2–A personal digital file cabinet. PaperSight 1.2–A complete image management system which handles document scanning, viewing, organizing, searching, and archiving. 412-488-3600

WordPerfect, Inc.
WordPerfect for NeXT–The first true WYSIWYG version of ths powerful, full-featured wordprocessor which dominates the PC word processing market.
801-225-5000

Connectivity, Communications and Emulation

Active Ingredients, Inc.
Communicae 2.0–A communication package that includes both DEC VT220 and Tektronix 4010/4014 terminal emulation, and standard file transfer protocols. 617-576-2000.

Cayman Systems, Inc.
GatorBox–Intelligent LocalTalk (TM)-to-Ethernet gateway; connects NeXT and Mac networks..Also, GatorShare, software for file sharing between Macintosh and NeXT Computers and GatorMail-Q, for linking Macintosh QuickMail users with NeXT e-mail system. 617-494-1999

Conextions, Inc.
3270Vision and *3270Vision Coax*–3270 emulation via TCP/IP over ethernet or via coax. 508-475-5411

Digital Instrumentation Technology, Inc.
FloppyWorks–Software that enables floppy drivesfor NeXT to read and write 1.44 MB Macintosh disks and to translate data between the Mac and NeXT machines. 505-662-1459

DataViz Inc.
MacLinkPlus/PC–File transfer and translation between the NeXT and Macintosh environments. 203-268-0030

Insignia Solutions, Inc.
SoftPC–DOS emulation at roughly the speed of a 10 Mhz AT. Supports CGA and EGA. 408 522 7600

Morning Star Technologies
Serial Port X.25/Daemon-S–provides flexible X.25 connectivity via the serial port. 614 451 1883

Touch Communications, Inc.
WorldTalk/400–Provides aceess to other mail systems (e.g. IBM Profs, DecTalk) via X.400 gateway support. 408-374-1680

Transarc Corporation
AFS 3.0–A distributed file system for large, multi-location networks; their are no local or user dependencies in the system. 412-338-4400

Database and Information Management

Imagine, Inc.
MediaStation 1.5–Archival, retrieving and processing of multimedia information. 313-487-7117

INGRES
INGRES Relational Database Management System (v 5.0)–4GL, SQL and visual programming methods for relational database management. 415-748-3427

Toltec Human Services
UNIX MUMPS Version 3.1–Standard database and programming language for the interactive manipulation and storage of large volumes of medical and business data. 405-840-4254

Virginia Tech Library System, Inc.
VTLS InfoStation 2.0–A hypermedia information access and authoring system for electronic libraries. 1-800-HOT-VTLS or 703-231-3605

Mathematics and Statistics

Halchin and Fleming
Orbit–Tool for exploring the dynamical system of periodic orbits. Rubik Algebra–Uses Rubik's cube as a tool for exploring elementary group theory. Spring–Animates motion of a spring with an attached mass; for exploring differential equations. Groups–Description of mathematical objects known as groups. 217-348-0917

Triakis, Inc.
DAN-The Data Analyzer–Interactive data analysis system with 2D plotting support. Math++–C-language numerical analysis source code math library. 505-672-3180

Wolfram Research, Inc.
Mathematica 1.2–A comprehensive software application for mathematical computation, symbolic manipulation, graphing, and high level programming. 1-800-441-MATH or 217-348-0917

Medical

(see also Toltec under Database)
TranScriber 1.0–A NEXT network or NeXT to central cervice medical record transcription tool.. 405-840-4254

Publishing and Graphics

(see also Lighthouse Design and WordPerfect under Business Productivity)

Adobe Systems Inc.
Adobe Type Library Plus Pack–contains 26 popular typefaces, (plus sample pages and keycap access charts for easy access through the Digital Librarian.) 800-344-8335

Frame Technology Corp.
FrameMaker 2.0d–Technical publishing software, including word processing, graphics, page layout, equation editing and book-building tools. 408-433-3311

Media Logic, Inc.
TopDraw–Page-based graphics software providing object-based graphics, text processing, continuous tone painting and page layout. 213-453-7744.

MicroMaps Software
MapArt–A presentation quality set of EPS maps–world, continents and regions, and 22 country maps. 609-397-1611

RightBrain Software
TouchType–A power tool designed expressly for typesetting at large sizes where every character is important. 415-851-1786

Stone Design Corp.
TextArt–Easy, intuitive access to the full range of text effects Display Postscript makes possible. 505-345-4800

The Font Company
The Font Company Font Library–Over 1500 PostScript Type 1 format typefaces. 602-998-7964

T/Maker Company
Click Art–Nearly 400 illustrations of Encapsulated PostScript EPS artwork. 415-962-0195

Sound

Metaresearch, Inc.
SoundWorks 2.0–A powerful,.easy to use sound recording and editing program..503-238-5728

Tools and Languages

Absoft Corp.
Absoft FORTRAN 77–Object Oriented FORTRAN compiler; fully compatible w/ NeXT's Interface Builder toolkit, allows programmers to add a graphical i/f to any FORTRAN program. 313-853-0050

ACUCOBOL
ACUCOBOL-85–VT-100 version of High 1974 /Intermediate 1985 ANSI COBOL standard. 619 566 3071

Adobe Systems Inc.
DisplayTalk-a development environment for Display PostScript programming. 800-344-8335

Highland Software, Inc
Flexible License Manager–A package that allows a software application to be licensed on a concurrent usage basis rather than a per-computer basis. 415-493-8567

Motorola, Inc.
Macro Cross Assembler (ASM96000), Simulator Programs 9SIM56000 and SIM96000)–Tools for DSP programmers. 512-891-2030.

OASYS
OASYS Native Compilers, OASYS Optimizing 680x0 Cross Compliers, OASYS Optimizing 88000 Cross Compilers (C, C==, Fortran, Pascal available for each)–Highly optimized Fortran, Pascal., C and C== compilers and cross compilers. 617-862-2002.

Objective Technologies, Inc.
[OT Palettes:2.0]–Custom palettes for IB. Smartfields, Chooser, MathPalette, and GraphPalette are currently available. 212-227-6767

Visual Understanding Systems, Inc
PaperSight Developers' Toolkit–More than 70 code and data modules for image management. Visus Voice Commander Toolkit–Advanced speaker-independent speech recognition toolkit. 412-488-3600

Young Minds, Inc.
Makedisc–CC-ROM formatting software for creating a CD-ROM disc image. 714-335-1350

Peripherals

Data Acquisition and Sound

Ariel Corp
DM-N Digital Microphone–High-fidelity stereo microphone with lab-quality data acquisition capabilities. QuintProcessor–5 27MHz DSP5001 's on a single board for the cube. ProPort A–Analog I/) interface with 2 channels of 16 bit analog in and 20 bit analog out with programmable sample rates. 201-249-2900

Dazzl, Inc.
Model 16/12 Analog to Digital Converter–data acquisition for 16 single ended or 8 differential channels; overall sampling rate of 200 kHz. 309-674-9317

IOtech, Inc.
SCSI1488/N–A SCSI-based IEEE interface plus software that lests a NeXT Computer control up to 14 IEEE instruments. The following require the SCSI 488/N: Serial488/4–A 4 channel IEEE to serial converter. Digital488/80–An 80 bit IEEE to digital I/O interface. DAC488–A digital to analog convertor in either 2 or 4 channel versions. ADC488 A/D Convertors–Supports 16 single ended or or 8 differential analog channels. 216-439-4091

Metaresearch, Inc.
Digital Ears–Audio input device and control software for entering and recording compact-disc quality sounds Digital Eye–Video input device and control software for capturing still and moving NTSC video images.503-238-5728

Singular Solutions
A/D64x–Hardware and software for high-quality sound recording and capture. 818-792-9567

Fax and Data Modems

Abaton (Everex)
Interfax 24/96NX–2400 baud data and 9600 baud fax modem. 1-800-444-5321 or 415-683-2226

Dove Computer Corporation
DoveFax–9600 baud fax modem and 2400 baud data modem. 1-800-622-7627 or 919-763-7918

Visual Understanding Systems, Inc
Fax Modem VS-24–9600 baud fax modem that can vector call to a fax machine if busy. 412-488-3600

Scanners and Printers

Abaton (Everex)
Scan 300 G/S–An 8-bit scanner that scans halftones, line art, and grayscale images.1-800-444-5321 or 415-683-2226

AGFA Compugraphics Division
ProSet 9400–A mid-range laser imagesetter that offers both true PostScript and PCL languages.
ProSet 9800–A high-speed laser imagesetter tideal for producing color separations.
SelectSet-5000–A fast and easy-to-operate color laser imagesetter.
StudioSet- 2000–A compact and versatile imagesetter that offers a variety of resolutions up to 2400 dpi. (508) 658-5600
.

Canon U.S.A., Inc.
IX-30F Image Scanner–An 8-bit flatbed scanner with a maximum scan resolution of 300 dpi. 1-800-848-4123

HSD Microcomputer, Inc.
Scan-X Professional–An 8-bit grayscale, desktop flatbed scanner that supports resolutions of up to 1500 dpi.
Scan-X Color–24 bit true color scanner supporting up to 300 dpi for grayscale 24 bit color images and up to 2400 dpi for line art. 415-964-1400

Oce Graphics
OceColor–An Adobe PostScrip, color printer that uses the latest thermal transfer technology, and supports the full range of PANTONE colors. 1-800-545-5445 or 415-964-7900

Visus, Inc.
Personal Page Scanner–up to 3 legal pages per minute scanner. Departmental Scanner– up to 11" by 17" at up to 12 pages per minute. Large Format Scanner–up to 24 by 60 inches, up to 400 dpi.
Industrial Scanner–up to 2000 dpi resoluiion, acurrate to .oo2 of an inch over 24 inches. 412-488-3600

Storage

the Cube Route, Inc.
Cube Route Hard Drives–Seagate Wren Hard Drives. 330MB, 660MB, 1 GB. 1-800-CUBE-RTE or 617-344-6061

Dayna Communications, Inc.
DaynaFile–External disk drive that lets NeXT Computers read and write to MS-DOS and NeXT-formatted floppy disks. 801-531-0600

Digital Instrumentation Technology, Inc.
Cube Floppy Plus–External floppy that lest NeXT users read and write MS-DOS (720KB and 1.44 MB) disks, Mac (400K, 800K and 1.44MB) disks and UNIX disks. Cube Floppy 2.9–External floppy that lest NeXT users read and write MS-DOS (720KB and 1.44 MB) disks, Mac (1.44MB) disks and (1.44 MB and 2.88MB) UNIX disks. 505-662-1459

EMAC
Metro CD–CD-ROM drive that also plays audio CD's. Metro DAT–1.3 GB digital audio tape back-up system. Metro Series Hard Drives–in 170MB, 335MB and 670MB capacities. 1-800-821-0806, ext 2155 oe 415-683-2155.

Epoch Systems, Incorporated
Epoch-1 InfiniteStorage Server–platform independent network server designed to handle the need for quick access times to large off-line storage. 508-836-4711

Microtech International, Inc.
Eclipse 1.2T–1 GB digital audio tape backup system. Eclipse 50R–Removable hard drive. Eclipse CD–CD-ROM drive with dual SCSI ports and a universal input power supply. Eclipse Serives Hard Disk Drives–ranging from 200MB to 1GB. 203-468-6223

Personal Computer Peripherals Corporation
JETSTREAM Computer Peripherals Corporation–A tape backup system capable of archiving up to 2.3 gigabytes of data per tape at speeds up to 14.4 megabytes/minute. 813 884 3092

Pacific Micro
PM 1.44–External SCSI floppy disk drive for data transfer between NeXT computers and both MS/DOS and Macintosh computers. PM-HDE–External SCSI enclosure for 1 or 2 NeXT hard disk drives.408-356-5001

Peripheral Land, Inc
PLI SuperFloppy 2.8–External floppy that lest NeXT users read and write MS-DOS (720KB and 1.44 MB) disks and UNIX (1.44MB and 2.88MB) disks. PLI CD-ROM–380 ms access time with Sony's newest mechanism. PLI Infinity 40 Turbo–Removable cartridges store up to 42 MB. PLI turbo Drives–Very fast 300MB and 600MB hard drives.1-800-288-8754

Other Peripherals

Extron Electronics/RGB Systems, Inc.
RGB 111 and RGB 63/31 Scan Board–Respectively a NeXT video interface and a NeXT video to "normal scan rate" converter. 800 633 9876 or 213 802 8804.

Software Engineering Solutions
At the Beep–Phone answering hardware and software. (512)343-2828

SCaNeWS' Role in the NeXT User Community

Our goals in distributing *SCaNeWS* are modest. We are geared more toward the needs of end-users, students and faculty than those of developers. Developers may find our newsletter interesting but perhaps not as technically oriented as they may like. Among our regular features we plan to include product reviews, tutorials for basic software development as well as for some of the more complex applications, bug reports, updates on how NeXT is faring in the marketplace (with an emphasis on the comings and goings of third-party vendors, ever-crucial to a product's success), and pointers to the most reliable sources of NeXT information.

We refer developers and other sophisticated programmers to the *NeXT Users' Journal*, which can be downloaded from the same archive site as *SCaNeWS* (see the adjacent box "Downloading .."). We read it and love it (thanks, Erica!) and occasionally make copies available at our meetings.

Downloading SCaNeWS (from an Archive)

If you miss(ed) any issues of *SCaNeWS* and have access to Internet, you can obtain them via anonymous file transfer protocol (ftp) as follows (**bold** indicates onscreen prompts, *italics* what you type):
At your local system prompt, type

ftp -n nova.cc.purdue.edu
ftp> *user anonymous <your full address>*
(e.g. mahoney@beach.csulb.edu)
ftp> *binary*
ftp> *cd /pub/next/Newsletters/SCaNeWS*
ftp> *ls -l*
This will give you a listing of all the newsletters currently available. To retrieve an issue:

ftp> *get <filename>*
Repeat the last command for as many issues as you want to retrieve. To return to your local machine:

ftp> *bye*

The file is in compressed form (you can tell by the .Z extension). To uncompress it, type *uncompress <filename>*. Now the newsletter is ready to be loaded into the NextApp *Preview* and printed.

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